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ABSTRACT

The Classroom Activity Files and Day Care and Home Learning Activities Files contain approximately 900 learning activites each, and were designed to promote competencies in children at different developmental ages. Twelve Head Start, kindergarten and preschool programs participated in a field study to evaluate the usability, content, and age-appropriateness of the files. The Developmental Profile was used to measure physical, self-help, social, academic and communication development in 788 three-, four-, and five-year olds enrolled in the programs. Pre- and post-tests and teacher evaluation forms were used. A secondary purpose of the study was to determine whether changes occurred in program practices as a result of the files and field test. Children in preschool programs in which the files were a major source of curriculum made significant gains. The greatest gains were in the academic area, while the most effective utilization of files occured in classroom settings. Expected gains were not achieved by use of both sets of files in day care programs, nor from the use of home-based files in home settings. Staff interviews indicated that teachers became more oriented to the developmental needs of children and more conscious of the need for individual child assessment as a result of their field test participation. (Author/JAC)

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A SUMMATIVE EVALUATION OF THE AIDS TO EARLY LEARNING 1976-1977

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Introduction

The Aids to Early Learning (AEL) materials, i.e., the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files, being investigated in this study are products resulting from several years of experiments related to the Home-Oriented Preschool Education (HOPE) program. The HOPE program was a home-oriented instruction system for three-, four-, and five-year-old children. HOPE consisted of three components: (1) daily 30-minute television lessons broadcast into the home, (2) weekly home visits by paraprofessionals who demonstrated to the parent how to teach the child, and (3) group instruction provided once each week in a mobile classroom. This program was field tested for three years in Southern West Virginia, from 1969-71. The results of the field test are documented in Summative Evaluation of the Appalachia Preschool Program, Summary Report (Bertram, Hines, and Randolph, 1971). Since 1971, subsequent research based upon the philosophical and programmatic framework of the HOPE program has been conducted.

The latter research was designed to (a) document competencies that the typical child should have by age six, (b) validate learning activities which could produce these competencies in young children, and (c) identify an optimum mix of learning activities for preschool children of different developmental ages.

Numerous research efforts focused on each of the preceding three areas. In the first area, a program of research was conducted using national and Appalachian panels of child development experts; more than 900 Appalachian parents verified and further refined the earlier findings. Results from this work were extended by literature search. Together these methods led to identification of 59 competencies applicable to children by the age of school

entrance. In a related conceptual activity, general goals, performance statements, and criterion statements were prepared for each competency.

The second area effort involved using the competency base to identify learning activities which might foster each competency at three, four, and five years of age, respectively. A national panel of child development and early childhood education experts rated the appropriateness of five sample learning activities for each competency. This process was cycled through a second iteration. The resulting learning activities became the models or examples from which the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files were developed.

Third, a study of children's play, via an extensive literature search coupled with expert panel ratings, identified play levels and natural play activities of children associated with particular competencies. From these, judgements were made concerning children's readiness for learning of particular competencies and competency clusters, and determinations were made of the optimum mix of competency-related learning activities for developmental threes, fours, and fives.

The development of the Files involved several staff members and consultants. Each activity was systematically reviewed and critiqued to assure that the end product would be based upon all previous research findings and most of all usable by the practitioner working to promote development in young children. The end results were two sets of Files containing approximately 900 activities each, designed for children of differing developmental age levels.

Work on the Files was completed in the Fall of 1975, and plans were formulated to conduct a formative evaluation of the Files in the Spring of 1976. The major purpose as stated in the NIE Scope of Work Statement for

1975-76 was to collect data to "Prepare final editing specification. . ." To accomplish this the following objectives were established.

1. Usability. To determine whether the Files were usable in various program settings.

2. Content. To determine appropriateness of the content of the Files.

3. Age-Appropriateness. To determine whether the Files were appropriate for children ages three, four, and five.

Forty-four programs in 14 different states responded to the Division of Early Childhood's solicitation for field test sites. The 14 states were: Alabama, Idaho, Illinois, Kentucky, Missouri, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin. Program types included Head Start, day care, kindergarten, handicapped, and nursery school/child development. Program variations included center based, home based, and a combination of center and home based. Approximately 197 classroom teachers and 118 home visitors, and approximately 5,055 children participated in the field test.

To determine the usability of the Files in the various program settings, the following types of data were collected. Prior to implementation of the field test, potential users were instructed to record the number of times each activity was used and to record any comments about the activity deemed necessary. These usage data and written comments were collected at the end of the field test and systematic recordings were made of each type of data by the various program users. An evaluation form was developed, distributed to all users, collected, and the results were analyzed. Additionally, written, evaluative comments were solicited from program directors, curriculum specialists and others responsible for program operations and curricular planning. These data separately and collectively allowed determination of the usability of the Files.

In order to determine if the content was indeed appropriate for use with young children, and at the same time meshing with the differing philosophies and emphasis of the programs, data were collected by the previously mentioned methods and analyzed. Specific items from the evalution form and written comments received more weight in making this determination.

The four procedures for collecting data were also utilized in determining the age appropriateness of the Files. Each activity contained specific "Age Variations" noting how each child, developmentally, would perform, and react to the activity. In some programs there was homogeneity of age, and in others heterogeneity of age. More weight was given to comments regarding age-appropriateness in these determinations.

In summary, data from the Spring Formative Evaluation Field Test allowed the following conclusion to be made. The Classroom Files were most usable in kindergarten, day care, Head Start and programs for the handicapped, and less usable in nursery school and child development programs. The Day Care and Home Files were found to be more usable in home-based programs and less usable in center-based programs. Center-users indicated they utilized the Day Care and Home Files more as a resource for ideas than as a major source in their curriculum.

The content of the Classroom Files was judged to be quite appropraite with only minor alterations and revisions deemed necessary. Programs with differing philosophies and emphases had little difficulty adapting and using the Classroom Files. Home users of the Day Care and Home Files found the content more appropriate than did center users.

When used with children ages three, four, and five, the Classroom Files were evaluated as very age appropriate. Home users of the Day Care and Home Files found the content more age-appropriate than did the center users.

The findings from the Spring Field Test, 1976, provided the necessary data for revision and editing purposes. Those revisions and edits which affected the Files' activities usability, content, and age-appropriateness were errata and disseminated to the Spring Field Test users and potential users in the Summative Field Test.

A major effort of the Division of Early Childhood/Parenting (DEC/P) for the 1976-77 program year was a summative evaluation of the Files, which was detailed in the scope of work statement. It was necessary to begin preparations and solicitation for field test sites in August and September, 1976. In August, 1976, such a solicitation by Memorandum was made to over 100 early childhood and child development programs within the Appalachian Region and to various programs outside the Region. Thirty-three programs responded and expressed interest. From mutual agreement and understanding of the tasks and established criteria, 20 programs agreed to use the AEL materials, but without the formal collection of data. These programs were identified for evaluation purposes as Secondary field-test sites. These programs agreed to use the Files and provide secondary type data via evaluation forms and written comments.

Thirteen programs agreed to participate and collect all necessary data, and DEC/P staff evaluated these programs as being able to meet the established criteria. Nine of the thirteen sites had participated in the formative evaluation of the Aids to Early Learning in the Spring, 1976 field test, and were therefore familiar with the curriculum materials. Also, these sites were utilizing or were familiar with the Developmental Profile as a result of their previous involvement. These programs were identified for evaluation purposes as Primary sites. Eight states were represented in the field test, seven within the Appalachian Region and one outside the Region.

The criteria established and utilized for selection of Primary field test sites were:

- Programs agreed to participate as a field test site for a minimum of six months.
- Programs agreed to utilize the Files as a major curriculum source.
- Programs conducted a pre- and post-assessment of the program's children utilizing an appropriate developmental test and shared these data with AEL's Early Childhood staff.
- Programs designated as Primary field test sites represented a program variation or intervention strategy needed in the study.
- Programs assigned experiences (Files activities) to children based upon their level of development and recorded the number of activities used.
- Programs provided other data, via evaluation forms and reports.

Purpose

The primary purpose of the study was to test the effectiveness of the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files in increasing the development and skills of preschool children in five areas measured by the Developmental Profile: Physical, Self-Help, Social, Academic, and Communication development. The children (N = 788) were three-, four-, and five-year olds who were enrolled in Head Start, day care, and kindergarten programs.

A secondary purpose was to evaluate the effects of the Day Care and Home Learning Files and the Classroom Learning Activities Files on user practices in the participating field sites.

The hypotheses to be tested were:

Hypothesis 1-5: Subjects (N = 788) in general using either of the Files will score significantly higher than would be predicted on each of the five scales of the Developmental Profile.

Hypothesis 6-10: Subjects (N = 421) in general using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 11-15: Subjects (N = 114) in Head Start programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 16-20: Subjects (N = 125) in day care programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 21-25: Subjects (N = 197) in kindergarten programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 26-30: Subjects (N = 270) in Head Start programs using the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files in combination[1] will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 31-35: Subjects (N = 68) in day care programs using the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files in combination[2] will score significantly higher than would be predicted on each of the five developmental scales.

Hypothesis 36-40: Subjects (N = 14) in Home-Based programs using the Day Care and Home Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

In addition to the above hypotheses, comparisons were made on the basis of sex and age. These analyses were conducted utilizing a 2 x 3 factorial analyses of variance, with pretest scores being covaried to rule out any

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[1] Children attend class one day per week and receive instruction in the home via a home visitor.

[2] Classroom and Day Care and Home Files are used in combination in a classroom setting.

initial differences. This type of analyses will allow the following null hypotheses to be tested.

Hypothesis 41-45: There will be no significant differences in the amount of gains in development on each of the five developmental scales between males and females when either of the Files are used as treatment variables.

Hypothesis 46-50: There will be no significant differences in the amount of gains in development on each of the five developmental scales between 3-, 4-, and 5-year olds when either of the Files are used as treatment variables.

Limitations of the Study

A study to determine the effectiveness of a curriculum is generally designed to exert a great deal of control over the environment, subjects, independent and dependent variables. This end is accomplished by controlling where the study is to take place, who will be implementing the curriculum, who will be the subjects, to what degree the subjects will recieve the curriculum, etc. Studies of this nature would generally involve an experimental and a control group so that comparisons could be made and any differences could be attributed to the independent variables. Although random selection of subjects is most desirous, this is not always feasible in educational research. A study so designed does allow for certain claims to be made about the purity of gains or lack of gains, but suffers somewhat when generalizations to other programs, subjects, ages, etc., need to be made and are not accounted for in the original study.

This study was initiated with the realization that possible threats to the internal validity existed. Defined, internal validity refers to the extent to which it can be argued that the administration of the treatment was the cause of the gain that was observed from the pretest to posttest. There

were several threats to the internal validity of the design used in the study, and the results were analyzed and interpreted accordingly.

Testing. This threat refers to the potential effects that taking a pretest can have on the posttest scores. For example, scores on an achievement test may increase slightly on the posttest even thought the treatment is ineffective. Also, subjects may fake scores on personality tests or attitude tests if they become aware of the nature of the experiment. However, in the field study, testing should not have been a serious threat to the internal validity of the study, since the subjects were not aware that they were being tested when the pretest data were being collected.

Regression. This threat refers to the fact that subjects who score extremely low on the pretest will tend to score higher on the posttest even though the treatment is ineffective. This increase from pretest to posttest could be mistakenly labeled as a treatment effect. Since the subjects were not selected for the field study on the basis of extremely low scores on a pretest, regression should not be a serious threat to the internal validity of the field study.

Instrumentation. This threat refers to changes in the measurement procedure that could result in differences between the pretest and posttest scores. This difference could be mistaken for a treatment effect. In the field study, the teachers were measuring the students' developmental skills first in September and October and then again in May or June. It was felt that the skill of the teacher in rating her students was substantially the same at the two measurement times. In addition, due to the long time between ratings, the teacher probably did not remember how she rated each specific student.

History. This threat refers to the occurrence of outside events that could cause differences between the pretest and posttest scores that could

be mistaken for a treatment effect. This would seem to be a potential threat in the field study. For example, children at ages 3, 4, and 5 are beginning to have more contact with other children and adults outside their immediate families. They could begin attending Sunday School classes; they could be going home with friends and interacting with their friends' parents; and they could be coming in contact with more developmentally advanced children on the playground. These contacts could have the effect of increasing the developmental skills of the subjects in the field study.

Maturation. This treatment refers to biological and psychological changes that take place between the pretest and posttest. These changes could affect the scores on the pretest and posttest thus producing a difference that could be mistaken for a treatment effect. This would also seem to be a potential threat to the internal validity of the field study. "In remedial education, which focuses on exceptionally disadvantaged persons, a process of wound healing, may be mistaken for the specific effect of a remedial X. (Needless to say, such a remission is not regarded as 'spontaneous' in any causal sense, but rather represents the cumulative effects of learning processes and environmental pressures of the total daily experience, which would be operating even if no X had been introduced.)" (Campbell and Stanley, 1963). However, the procedure for calculating the expected gain (detailed in another section of this report) may provide a partial control for this threat. The developmental rate (DA/CA) was computed using the pretest data. This rate reflects the effects of the overall environment to that point in time. If it can be assumed that that rate remained constant over the next few months, then to that extent the threat of maturation was controlled.

Confounding. This threat refers to the potential influence of an extraneous, uncontrolled variable on the gain scores. In the field study the

uncontrolled variable consisted of the experiences the children had in the program they were attending. These experiences could produce differences between pretest and posttest scores that could be mistaken for a treatment effect. A research design with a control group that would not have received the Files would have been needed to control for the confounding present in the field study.

Collection of Data

Four procedures were utilized for collection of data during the field test. They were: (1) assessment of children's development on a pre-post bases, (2) information provided by teachers via an evaluation form, (3) data relating to the usage of the Files activities, and (4) formative data collected by interview regarding the impact of the Files on the user's program.

The Developmental Profile was identified as the instrument most appropriate for collecting data relating to children's development during the field test. The Profile is an inventory of skills which has been designed to assess certain aspects of a child's development from birth to pre-adolescence. The Profile consists of 217 items arranged into five scales. All scales have the items arranged into age levels. The age levels proceed at six-month intervals, from birth to 3 1/2 years and thereafter by year intervals. Each age level consists of three items. The Profile yields results, expressed in months, in areas of physical (motor), self-help, social (emotional), academic (cognitive), and communication (language) development.

Certain revisions were made to the Profile to make it more easily administered, scored, and interpreted by the local program's teachers. Since the age range of the children participating in the field test was from 36-72 months, it was possible to truncate the Profile at the lower and upper levels.

All items assessing development below 18 months and above 90 months were eliminated. This truncation allowed both a basal and ceiling to be established for each scale, with a constant 18 months being added to each individual's scale score. Children with developmental age scores on a particular scale below 24 months and above 78 months on the pretest were not included in the final analysis. Additional revision included elimination of one item from each age level grouping of three.

Reliability coefficients for internal consistency for the five scales of the revised Developmental Profile were computed on 1,050 cases. The coefficients were: Physical Scale .79; Self-Help Scale .78; Social Scale .82; Academic Scale .87; and Communication Scale .83. A coefficient alpha of .80 is the generally accepted standard and between 20-30 items are required to obtain this level (Nunnally, 1967). The alphas obtained for the revised Profile are therefore very respectable, and allow some reliance upon the data obtained for analyses and evaluation of changes in development during the field test.

In another effort to evaluate the reliability and validity of the revised Profile, a local Head Start program administered the original Developmental Profile to 72 children in the three-, four-, and five-year-old age range. The revised Profile was scored, for each child, according to the credit given to the items on the original. Pearson correlations between scales were obtained and are reported in Table 1.

Additional analyses of the revised Profile include: Inter-scale correlations, item-to-item and item-to-scale correlations, frequency of pass-fail for each item by age, sex and income level, and Guttman scalogram analysis. These data will assist in further revisions and will be reported in a technical report to be issued by the Laboratory at a future date.

Table 1

Pearson Correlations Between Scales for the Original and Revised Developmental Profile

Revised	Original				
	Physical	Self-Help	Social	Academic	Communication
Physical	.95				
Self-Help	.74	.89			
Social	.74	.75	.94		
Academic	.69	.72	.81	.87	
Communication	.74	.70	.81	.78	.91

Significance = .001
N = 72

The Profile was administered to all children in the Primary field test programs, both pre- and post- by the program's teachers. Each program was given instructions regarding administration and scoring procedures and how to interpret results for curricular planning. Instructions on interpretation of Profile results contained the caution that "the results are not absolute, but can be interpreted as reasonable indicators." Local programs were given the option to score and interpret the Profiles themselves or send them to the DEC/P staff for scoring, profiling the results and specific comments for curricular planning, which were returned to the local programs. Data from both options were checked for accuracy and coded for computer analysis.

An evaluation form (Appendix A) consisting of nine items was sent to each teacher participating in the field test. Sixty-seven teachers completed, and returned this form at the end of the field test. Information obtained from this form related to: Number of years of experience teaching, level of education, methods utilized in selecting Files' activities, areas of development most important for children, area of development children would achieve

the most gains in, percentage of time or emphasis given to curricular areas, and to what extent the Files were utilized as part of the curriculum. These data were checked for accuracy and completeness, and coded for computer analysis.

During the orientations given to field test sites, each DEC/P staff member encouraged teachers to maintain accurate records concerning the number of times each activity within the 59 competencies was used. At the end of the field test, a one-page form (Appendix B) was sent to each teacher to collect these data. Sixty-seven teachers completed and returned this form. The DEC/P staff categorized and coded these usage data into five areas of development corresponding to the five Developmental Profile scales.

During the field test period, programs were encouraged to provide written comments or notations of any changes in their practices. Also, at the end of the field test all Primary programs were contacted by phone and where possible the directors, curriculum specialists and a certain number of teachers were interviewed by phone by an experienced interviewer. The interviewer focused upon what impact did the Files have upon the users program. These data are presented in the result section of this report.

Programs and Subjects

As noted in the introduction of this report, 33 programs responded to the Division of Early Choldhood's request for participation in the field test. This number was reduced to 13 through mutual agreements and understanding regarding what was required for full participation. These programs were designated as Primary field test sites, and the remaining 20 as Secondary field test sites. Twelve of the 13 Primary programs were able to complete the field test, providing the required data. Only data from the Primary sites were utilized in the impact evaluations of the Files.

There was a total of 788 children tested both pre and post, with the 67 teachers conducting the testing of children, completing the evaluation form, and providing data relating to the usage of Files activities. There were 303 males and 330 females, with no indication of sex for 155. The number of children within certain age ranges are found in Table 2 below.

Table 2

Distribution of Children by Age Range

Number	Age Range
7	30-35 months
172	36-47 months
272	48-59 months
288	60-71 months
49	72-84 months

The following programs were involved in the field test as Primary sites.

Head Start (393 children)

Nicholas County Head Start
Summersville, West Virginia

Upshur County Head Start
Buchannon, West Virginia

Morgan-Lawrence Head Start
Decatur, Alabama

Tri-County Head Start
Saxton, Pennsylvania

Day Care (198 children)

Day Care Services, Inc.
Franklin, Pennsylvania

Young World, Inc.
Lansing, Michigan

Penncrest Day Care
Meadville, Pennsylvania

Tri-County Day Care
Saxton, Pennsylvania

Kindergarten (197 children)

Lawrence County Board of Education
Coal Grove, Ohio

Tazewell Elementary School
Tazewell, Virginia

Western Tennessee School Districts

Margaret Newton Elementary
Tiptonville, Tennessee

Barnetts Chapel
Arlington, Tennessee

Paul G. Caywood Elementary
Lexington, Tennessee

Analysis of Data

The traditional pre-post analysis of data was not selected, since this approach is insensitive to the varying rates of development unique to each child. It is an indisputable conclusion that all children do not develop at the same rate and it can be assumed that the prior rate of development would continue during the field test to some degree. In order to control for this, it was necessary to compute for each child a Coefficient of Rate and a predicted developmental age to which actual development could be compared. The following formula was utilized:

$$\left(\frac{DA}{CA}\right) \text{ (time) + DA = Predicted Developmental Age}$$

DA = Developmental Age obtained at pretest
CA = Chronological Age at pretest
time = Number of months subject received treatment

Such an approach is based upon the assumption $\frac{DA}{CA}$ = a Coefficient of Rate and that this coefficient is an indication of past development as well as future development. If any passage of time is multiplied by this coefficient, the end product will be an estimate of the developmental age change which has or will occur during that time. This value can then be added to the existing developmental age obtained from the pretest and the result will be a predicted or expected developmental age, i.e., at the end of the experience.

To illustrate, the following examples are given. Subject A is chronologically 48 months old, and the obtained developmental age for physical development is 48 months. Subject A participated in the field test for eight months. To obtain the predicted developmental age, we use the previously mentioned formula.

$$\left(\frac{48}{48}\right) \text{ (8) + 48 =}$$

$$\text{(1) (8) + 48 = 56 months}$$

At the end of eight months, subject A should have a physical development age of 56 months. This can be compared to the actual developmental age obtained from the posttest and the differences statistically analyzed.

Subject B is chronologically 48 months old, but developmentally measured only 36 months at pretest time. Subject B participated in the field test for eight months. Utilizing the same formula, we can compute the "rate" of development and predict Subject B's developmental age at the end of the field test.

$$\left(\frac{36}{48}\right)(8) + 36 =$$

$$(.75)\ (8) + 36 = 42 \text{ months}$$

The Coefficient of Rate is .75, and the developmental age is 42 months, i.e., six months of development in an eight-month period is the rate. Actual development, obtained from the posttest, can be compared to the predicted and the differences analyzed statistically.

The correlated t-test was used to test Ho: 1-40. The means of the predicted scores and the posttest scores were compared for significant differences. This is analogous to pairing, i.e., where the same individuals are measured before and after treatment and the obtained scores are paired for analysis. In the present usage, the same individuals' predicted and posttest scores were paired. The purpose of the pairing is to reduce all possible extraneous influences on the variable being measured. That is, pairing reduces the effect of subject-to-subject variability.

In addition to the above analysis, comparisons were made on the basis of sex and age. Scores obtained from the Developmental Profile were positioned in a 2 x 3 table in which the rows were the male and female categories for the variable sex and the columns were the three-, four-, and five-year old

categories for the variable age. A 2 x 3 factorial analysis of variance with unequal cell sizes was performed for each of the five developmental scales. This 2 x 3 analysis yielded a test of the main effects of sex which determined whether one sex gained significantly more than the other. The analysis also yielded a test of the main effects of age which determined if differences existed among the three age levels. Also, this 2 x 3 analysis yielded a test of the interaction between sex and age which determined if the effects of age are similar for the males and females. These data analyses are tabled and discussed in the result section of this report.

Data collected from the evaluation form, completed by 67 teachers, were analyzed to obtain frequencies, means, standard deviations, and percentages. These data were tabled and discussed in the result section of this report.

Results

Total Subjects

Data from the transpositions of the pretest scores into predicted scores and posttest scores were analyzed by the correlated t-test to test hypotheses 1-5. The hypotheses predicted that subjects receiving either of the Files as treatment would have gains in development in the five scale areas significantly greater than predicted development. Data presented in Table 3 below and Figure 1 on the following page reveal statistically and visually that children in the field test did achieve developmental gains, statistically significant ($p < .0005$) beyond that which was predicted.

Table 3

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of All Subjects in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	756	68.89	15.78	8.23	755	<.0005
	Predicted		64.37	15.52			
Self-Help	Post	740	69.53	15.14	10.43	739	<.0005
	Predicted		63.78	15.87			
Social	Post	744	69.01	15.91	11.01	743	<.0005
	Predicted		62.16	16.87			
Academic	Post	759	67.00	16.89	19.26	758	<.0005
	Predicted		55.74	17.50			
Communication	Post	771	61.91	16.93	15.39	770	<.0005
	Predicted		52.98	16.13			

The greatest amount of gain occurred in the area of academic development with a mean difference of 11.2 months between the predicted and posttest scores. That is, not only did the children achieve the predicted rate of

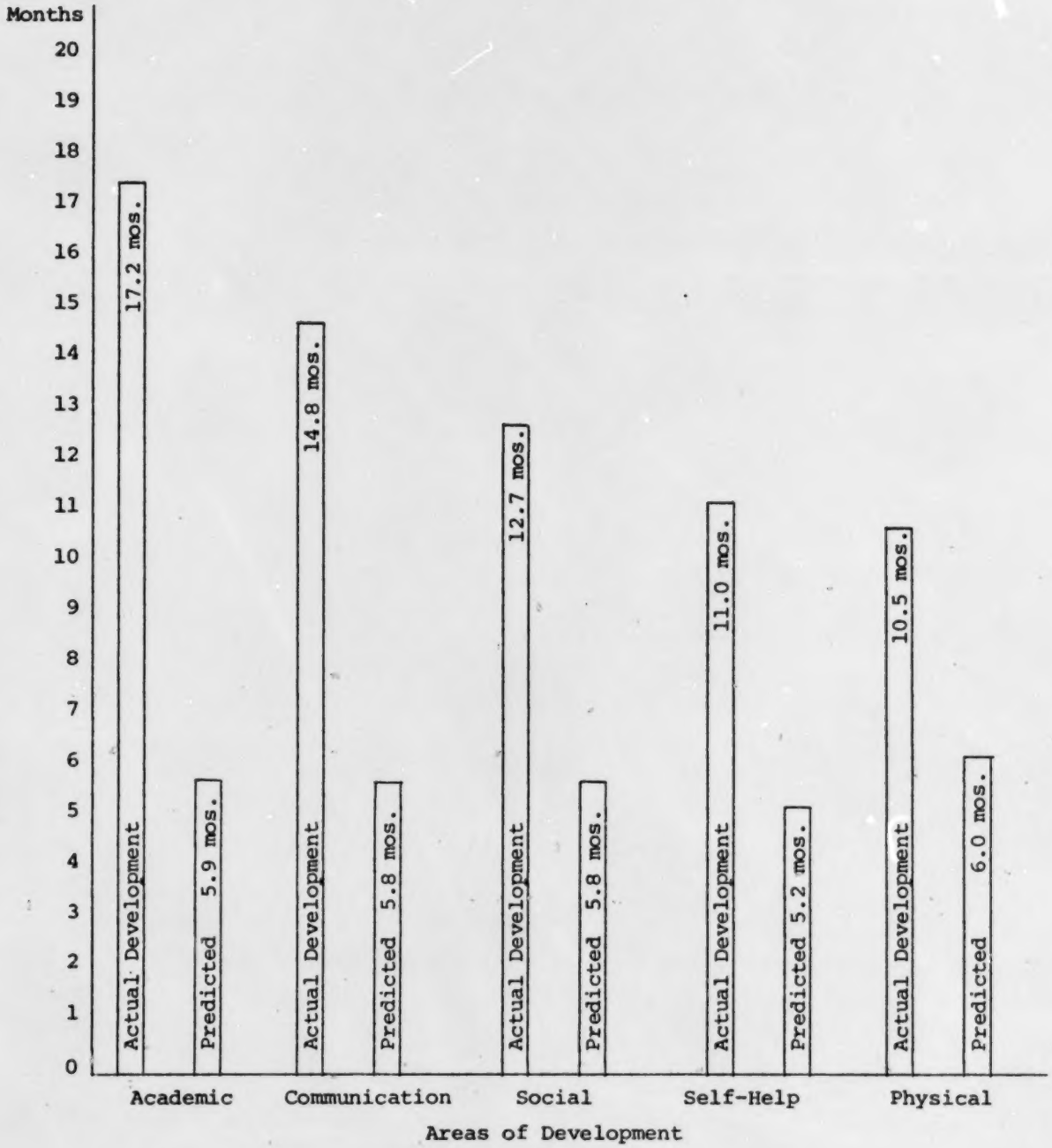

Figure 1

Actual and Predicted Development for
All Subjects in the Field Test*

*See Appendix C for other figures relating to remaining subgroups.

development of 5.9 months, but actually attained 17.2 months. For every month in the field test they were developing approximately at a rate of two and one-half months. The next area of development with the greatest gains was communication with 8.9 months of development beyond what was predicted. This gain is more than double the predicted rate. Social development was 6.8 months greater than the predicted gain. While self-help and physical development were 5.7 months and 4.5 months greater respectively.

The pretest means from the Developmental Profile are presented in Table 4 below, so that comparisons can be made between the pretest means and the chronological age mean. The average chronological age of the children at the time of pretesting was 56.4 months, and at the posttest the average was 63.2. In comparing the average chronological age with their obtained

Table 4

Pretest Means and Standard Deviations for All Subjects Participating in the Field Test

Scale	Pretest Mean	s.d.
Physical	58.3	15.3
Self-Help	58.5	15.5
Social	56.3	16.5
Academic	49.8	16.9
Communication	47.1	15.0

N = 791
C/A = 56.4 at Pretest
C/A = 63.2 at Posttest

developmental ages for each area, it can be noted that physical and self-help development was approximately two months higher than chronological age, and social development was equal to the chronological age. Academic development was 6.6 months below chronological age, and communication development was 9.3 months below chronological age at the time of pretesting. Posttest means found in Table 3 were all above the chronological age average of 63.2 months on all scales with the exception of communication which was 61.9 months.

Classroom Files

The correlated t-test was used to test hypotheses 6-10 for significant differences between the predicted and posttest means on each of the five developmental scales. The hypotheses predicted that subjects receiving the Classroom Learning Activities Files as a treatment variable would have developmental gains significantly greater than the predicted gains. There were 421 children in Head Start, day care and kindergarten who received this treatment. As can be seen from Table 5, significant differences ($p < .0005$) existed between the predicted mean and the post mean on each of the five developmental areas measured.

The largest gains were made in the academic area of development. The difference between the predicted and posttest means was 10.8 months. That is, 10.8 months beyond what was predicted as the normal amount of development. This represented a total of 18.2 months of development for seven months of instruction. The four remaining areas of development represented a more equal rate than noted in Table 3 and the preceding discussion. The mean differences between the predicted and posttest scores are as follows: social, 9.6; communication, 7.6; physical, 7.6; and self-help, 7.0.

In comparing the chronological age mean (57.8 months) at pretest time to pretest scale means, it is noted that two areas of development were higher than

Table 5

t-test Analysis of the Predicted Developmental Age and Actual Posttest Development Age of All Subjects Receiving Treatment of Classroom Files in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd.	t-value	d.f.	1 Tail Prob.
Physical	Post	320	68.59	14.49	8.82	319	<.0005
	Predicted		60.99	15.21			
Self-Help	Post	310	68.95	13.17	8.32	309	<.0005
	Predicted		61.90	15.08			
Social	Post	306	72.44	13.41	10.62	305	<.0005
	Predicted		62.82	16.42			
Academic	Post	313	72.00	13.88	12.93	312	<.0005
	Predicted		61.13	16.98			
Communication	Post	324	64.85	14.42	10.22	323	<.0005
	Predicted		56.87	14.55			

chronological age. Self-Help was 2.1 months higher and social development was .9 months higher. The other three areas were lower: physical, 1.9; academic, 4.0; and communication, 6.7 months. The posttest means were all higher than the chronological age mean (64.7 months) at the time of posttesting. That is to say, children receiving the Classroom Files as a major source of curriculum, not only closed the gap between lagging development and their chronological age, but finished the year functioning, on the average, above their chronological age in all five areas of development. These data are found in Table 6.

Head Start--Classroom Files

There were 114 subjects enrolled in Head Start who received the Classroom Files as treatment. Data were analyzed to test the hypotheses 11-15 that actual gains during the field test would be significantly greater than that predicted. From these analyses, significant differences ($p < .0005$) between the predicted

Table 6

Pretest Means and Standard Deviations for All Subjects Participating in the Field Test Receiving the Classroom Files as Treatment

Scale	Pretest Mean	s.d.
Physical	55.9	14.7
Self-Help	59.9	15.4
Social	58.7	15.3
Academic	53.8	16.2
Communication	51.1	13.5

N = 421
C/A $\bar{X}$ 57.8 at Pretest
C/A $\bar{X}$ 64.7 at Posttest

and posttest means were obtained for the five areas of development. Table 7 presents the individual means for the posttest and predicted as well as the statistical significance levels for the t-test which was performed on these data. The two areas in which the most gains were obtained were academic and communication with approximately 10 months in each area. This corresponds to approximately 17 months of development for the seven-month field test period. Gains for the other three areas of development exceeded the predicted rate in this order: physical, 8.8; social, 6.2; self-help, 4.6.

The average chronological age (15.8 months) for the Head Start children was 51.8 months. At the time of pretesting they were developmentally performing at a higher level than their chronological age in physical (56.9 months), self-help (67.9 months), and social (59.7 months) as can be noted in Table 8. In academic and communication development, they were performing at a lower level with averages of 47.7 and 49.1 respectively. The chronological age average of 58.8 months at posttest time can be compared to the posttest means of the five areas of development in Table 7 and it can be noted that all are higher.

Table 7

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Head Start Subjects Receiving Treatment of Classroom Files in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	112	73.48	13.68	8.06	111	<.0005
	Predicted		64.65	13.57			
Self-Help	Post	107	80.42	12.11	4.22	113	<.0005
	Predicted		75.78	13.05			
Social	Post	112	74.06	12.36	5.29	111	<.0005
	Predicted		67.84	11.85			
Academic	Post	113	64.76	13.10	9.14	112	<.0005
	Predicted		54.33	13.28			
Communication	Post	113	66.23	16.79	7.70	112	<.0005
	Predicted		55.86	12.24			

Table 8

Pretest Means and Standard Deviations for Head Start Subjects Receiving Classroom Files as Treatment

Scale	Pretest Mean	s.d.
Physical	56.9	12.6
Self-Help	67.9	12.3
Social	59.7	10.7
Academic	47.7	12.0
Communication	49.1	10.7

N = 114
C/A $\bar{X}$ 51.8 at Pretest
C/A $\bar{X}$ 58.7 at Posttest

Day Care--Classroom Files

Hypotheses 16-20 predicted that children enrolled in day care programs receiving the Classroom Files as treatment would have gains in development significantly greater than predicted. There were 125 children participating, and the duration of the field test was 7.2 months. As Table 9 indicates, statistical significance ($p < .0005$) was obtained for four areas of development. Self-help was the exception where a $p < .09$ level of significance was obtained. Although this does not allow for acceptance of this specific hypothesis, it can be noted that the children did achieve a higher posttest mean score. Again, the greatest gains were made in academic development with 16.8 months, i.e., 7.7 months beyond the predicted rate. Communication (4.4 months) was replaced by social development for the second highest with 6.1 months gain, and the remaining two areas follow with physical, 5.1 months; and self-help with 2.0 months gain beyond the predicted.

Table 9

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Day Care Subjects Receiving Treatment of Classroom Files in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	118	62.72	17.73	3.06	117	<.001
	Predicted		57.54	15.68			
Self-Help	Post	112	66.16	13.90	1.31	111	NS
	Predicted		64.06	14.38			
Social	Post	116	66.00	14.17	3.88	115	<.0005
	Predicted		59.93	17.83			
Academic	Post	113	63.79	14.37	4.64	112	<.0005
	Predicted		56.05	16.83			
Communication	Post	119	57.20	13.28	3.20	118	<.001
	Predicted		52.78	13.71			

The chronological age mean for the day care children was 49.4 at the time of the pretest. Physical and self-help and social development were higher, and academic and communication development were lower (Table 10). But all test means were higher than the chronological age mean of 56.6 at the time of posttesting.

Table 10

Pretest Means and Standard Deviations for Day Care Subjects Receiving the Classroom Files as Treatment

Scale	Pretest Mean	s.d.
Physical	50.2	14.1
Self-Help	58.2	14.9
Social	52.0	17.6
Academic	46.9	16.6
Communication	45.4	13.3

N = 125
C/A = 49.4 at Pretest
C/A = 56.6 at Posttest

Kindergarten--Classroom Files

Hypotheses 21-25 stated that children enrolled in kindergarten programs receiving the Classroom Files as treatment would achieve greater gains than predicted in each of the five developmental areas measured. The means were analyzed for significant differences, and the results are reported in Table 11. It can be noted that statistical significant differences ($p < .0005$) were obtained in all five areas. The greatest gains were made in academic development with 13.2 months beyond the predicted rate. This was followed by social, 13.1; communication, 11.1; self-help, 11.1; and physical, 9.9 development.

Table 11

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Kindergarten Subjects Receiving Treatment of Classroom Files in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	178	73.61	10.13	9.98	177	<.0005
	Predicted		63.66	15.05			
Self-Help	Post	174	70.93	12.79	11.51	173	<.0005
	Predicted		59.81	15.71			
Social	Post	166	78.45	9.65	11.92	165	<.0005
	Predicted		65.29	15.82			
Academic	Post	176	78.51	9.80	14.15	175	<.0005
	Predicted		65.25	16.12			
Communication	Post	181	71.45	11.20	13.03	180	<.0005
	Predicted		60.33	14.88			

The kindergarten children achieved over-all the greatest gains in all five areas of development than any other sub-group of subjects. Also, these gains were more balanced between developmental areas than other gains made by other sub-groups.

The pretest means were lower than the chronological age mean of 67.2 months in all five areas of development at the beginning of the field test. The kindergarten children had the greatest deficits between chronological age and developmental ages than any other sub-group of subjects. But at the time of posttesting, the gap between the chronological age and developmental ages had been closed considerably. As can be seen in Table 11, the developmental age means in the social and academic areas exceeded the chronological age mean of 73.7 months. Self-help, physical and communication were approximately two months lower. These data are presented in Table 12.

Table 12

Pretest Means and Standard Deviations for Kindergarten Subjects Receiving the Classroom Files as Treatment

Scale	Pretest Mean	s.d.
Physical	59.3	14.6
Self-Help	56.6	15.8
Social	62.3	15.6
Academic	60.9	15.5
Communication	55.8	14.1

N = 187
C/A $\overline{X}$ 67.2 at Pretest
C/A $\overline{X}$ 73.7 at Posttest

Head Start--Combination of Files

Hypotheses 26-30 stated that Head Start subjects (N = 261) who received instruction from the Classroom Files and the Day Care and Home Files would score significantly higher than would be predicted on each of the five developmental scales. This program variation provided experiences in the classroom and in the home, with children attending classes one or two days a week where the Classroom Files were used, and a home visitor visiting the home and using the Day Care and Home Files with the child and parents. The differences between the predicted and posttest means were statistically significant ($p < .0005$) for self-help, social, academic and communication. Physical development was not significant ($p < .27$) since the posttest mean was .5 months lower than the predicted mean. Academic development was the highest with 15.4 months beyond the predicted mean, followed by communication with 13.3 months. Self-help and social development were 6.7 and 5.2 months greater than the predicted mean. These findings are reported in Table 13.

Table 13

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Head Start Subjects Receiving Treatment of Classroom Files and Day Care and Home Files in Combination via Classroom Experience and Home Visitor in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	242	68.23	15.45	-0.60	241	NS
	Predicted		68.79	14.88			
Self-Help	Post	250	64.83	14.91	7.14	250	< .0005
	Predicted		58.04	13.33			
Social	Post	241	64.70	16.45	4.84	240	< .0005
	Predicted		58.43	17.09			
Academic	Post	248	64.84	19.03	12.98	247	< .0005
	Predicted		49.39	18.01			
Communication	Post	250	57.70	18.11	11.32	249	< .0005
	Predicted		44.31	15.95			

By referring to Table 14, the pretest means for each developmental area can be compared to the chronological age mean. Physical development was

Table 14

Pretest Means and Standard Deviations for Head Start Subjects Receiving Classroom Files and Day Care and Home Files, Via Classroom Experience and Home Visitor as Treatment

Scale	Pretest Mean	s.d.
Physical	63.0	14.8
Self-Help	53.5	13.6
Social	53.3	17.6
Academic	43.8	17.2
Communication	39.2	14.5

N = 270
C/A $\bar{X}$ 57.1
C/A $\bar{X}$ 63.3

higher than the chronological age, and the other four were lower. Communication was extremely low, being 17.9 lower. The chronological age mean of 63.3 at the end of the field test can be compared to the posttest means found in Table 13, and these are found to be higher than the chronological age, with the exception of communication.

Day Care--Combination of Files in Classroom

Another program variation allowed the use of both Files, i.e., Classroom Files and the Day Care and Home Files in combination in a classroom setting to be studied to determine their impact on children in day care. Hypotheses 31-35 was tested to determine if significant differences existed between the predicted and posttest means. As detailed in Table 15, no significant difference existed in any of the five areas tested. Social and physical development were the only areas which had gains greater than the predicted, while the remaining three were less.

Table 15

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Day Care Subjects Receiving Treatment of Classroom Files and Day Care and Home Files in Combination Via Classroom Experience in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	66	62.65	21.70	0.06	65	NS
	Predicted		62.54	18.10			
Self-Help	Post	61	69.78	18.67	-0.82	60	NS
	Predicted		71.75	16.78			
Social	Post	67	59.25	21.20	0.17	66	NS
	Predicted		58.94	20.49			
Academic	Post	67	55.76	18.98	-0.49	66	NS
	Predicted		56.49	16.84			
Communication	Post	66	53.93	18.40	-1.46	65	NS
	Predicted		56.09	15.28			

Table 16 contains the pretest means and the chronological ages for both pretest and posttest periods. The pretest means were all higher than the chronological age means, while posttest means were higher only on physical, self-help, and social development. Academic and communication development means were lower.

Table 16

Pretest Means and Standard Deviations for Day Care Subjects Receiving Treatment of Classroom Files and Day Care and Home Files in Combination Via Classroom Experience

Scale	Pretest Mean	s.d.
Physical	55.3	17.6
Self-Help	64.6	16.5
Social	51.2	18.1
Academic	49.2	15.3
Communication	49.4	14.7

N = 69
C/A $\bar{X}$ 49.1 at Pretest
C/A $\bar{X}$ 57.1 at Posttest

Head Start, Home-Based--Day Care and Home Files

Hypotheses 36-40 predicted that children in a Head Start home-based program using the Day Care and Home Files would achieve greater gains in development than predicted. As can be noted in Table 17, no significant differences existed between the predicted age mean and posttest age mean in physical, self-help, social and communication development. Academic development was significantly ($p < .0005$) greater than the predicted rate.

The chronological mean age of these children was 51.7 at the time of pretesting. This age mean can be compared to the five scale means in Table 18 where only one mean, academic, is lower than the chronological mean age. The

chronological age of 58.7 at the time of posttesting, is lower than the means on the physical, self-help, social and academic scales, but higher than the communication mean.

Table 17

t-test Analysis of the Predicted Developmental Age and Actual Posttest Developmental Age of Head Start Home-Based Subjects Receiving Treatment of Day Care and Home Files in Five Areas of Development

Scale	Variable	N	$\bar{X}$	sd	t-value	d.f.	1 Tail Prob.
Physical	Post	13	64.38	9.69	-0.45	12	NS
	Predicted		65.61	8.28			
Self-Help	Post	13	68.53	8.73	0.08	12	NS
	Predicted		68.23	9.37			
Social	Post	14	58.78	9.93	-1.58	13	NS
	Predicted		64.57	12.02			
Academic	Post	14	63.85	13.38	4.14	13	<.0005
	Predicted		49.78	11.43			
Communication	Post	14	49.71	16.87	-1.85	13	NS
	Predicted		59.71	15.34			

Table 18

Pretest Means and Standard Deviations for Head Start Home-Based Subjects Receiving Treatment of Day Care and Home Files

Scale	Pretest Mean	s.d.
Physical	59.57	10.11
Self-Help	61.92	11.20
Social	56.85	10.86
Academic	43.92	10.29
Communication	52.5	13.59

N = 14
C/A = 51.7 at Pretest
C/A = 58.7 at Posttest

Age and Sex Analysis

To test Hypotheses 41-45 and 46-50, scores obtained from the Developmental Profile were analyzed using a 2 (sex) x 3 (age) factorial analysis of variance for unequal N. The covariance technique was used to adjust pretest scores for significant difference which may have artificially influenced the patterns of results. This analysis was done to determine if one sex had gains significantly greater than the other sex and if one age had gains significantly greater than the other two age groups. Posttest means and standard deviations of the subjects by sex and age for each variable are shown in Table 19. The F-ratios and significance levels obtained from the analysis of variance on these means are in Table 20.

Table 19

Posttest Means and Standard Deviations for Age and Sex in Five Areas of Development

	Sex		Age		
	Male	Female	3s	4s	5s
Physical	$\bar{X}$ = 69.47 sd = 14.49 N = 303	$\bar{X}$ = 69.6 sd = 15.41 N = 330	$\bar{X}$ = 59.00 sd = 15.73 N = 148	$\bar{X}$ = 69.93 sd = 15.00 N = 241	$\bar{X}$ = 75.54 sd = 10.33 N = 244
Self-Help	$\bar{X}$ = 69.47 sd = 14.49 N = 292	$\bar{X}$ = 68.26 sd = 14.42 N = 313	$\bar{X}$ = 64.46 sd = 14.66 N = 151	$\bar{X}$ = 68.67 sd = 15.50 N = 215	$\bar{X}$ = 71.80 sd = 12.57 N = 239
Social	$\bar{X}$ = 68.35 sd = 15.66 N = 292	$\bar{X}$ = 69.98 sd = 15.58 N = 312	$\bar{X}$ = 61.00 sd = 15.00 N = 137	$\bar{X}$ = 67.48 sd = 14.95 N = 239	$\bar{X}$ = 75.91 sd = 13.81 N = 228
Academic	$\bar{X}$ = 66.02 sd = 15.95 N = 295	$\bar{X}$ = 67.85 sd = 16.66 N = 322	$\bar{X}$ = 53.58 sd = 14.47 N = 131	$\bar{X}$ = 64.75 sd = 15.33 N = 241	$\bar{X}$ = 75.32 sd = 11.91 N = 245
Communication	$\bar{X}$ = 60.83 sd = 16.48 N = 301	$\bar{X}$ = 63.16 sd = 16.49 N = 327	$\bar{X}$ = 54.23 sd = 14.77 N = 133	$\bar{X}$ = 59.29 sd = 16.49 N = 239	$\bar{X}$ = 68.68 sd = 14.86 N = 256

No significant main effects for sex were found on any of the five variables. Significant ($p < .001$) main effects for age, i.e., three-, four-, and five-year olds, were found on each of the five variables. No significant interaction effects (age/sex) were obtained.

The Files when used as a curriculum source does not promote development in one sex more than the other sex. But the data suggest that when children are instructed via the Files' activities, those children who are five years of age will benefit more and possibly have greater gains over a period of time than will three- and four-year olds.

Table 20

F Ratios of Analyses of Variance

	Source	
Scale	Sex	Age
Physical	.19	24.01*
Self-Help	.99	8.76*
Social	.73	21.16*
Academic	2.13	53.62*
Communication	1.82	27.36*

* $p < .001$

Utilization of Files

Data collected during the field test regarding the number of activities used and what percent the Files were utilized toward the total curriculum are noted in Table 21 and Appendix D. The differences between the predicted and posttest means are also presented so that comparisons between utilization and gains in development can be made. Usage of the activities corresponds closely to the

number of activities contained in the Files. Teachers generally used more social-related activities followed by academic, communication, self-help, and physical in that order. The number of activities contained in the Files follows the same order, i.e., social activities number 300, academic 270, communication 210, self-help 60, and physical 45.

The Files were made up of about 44 percent of the total curriculum. This indicates that teachers were utilizing other curriculum sources either self developed or more formalized, marketed materials. Yet, the majority of comments made by the teachers indicated that the Files were the major source.

Table 21

Utilization of Files Data for All Teachers
(N = 67)

Scale	Mean Difference	Average No. Activities	% Time Files Utilized
Academic	11.2	162.2	46.5
Communication	8.9	126.9	48.4
Social	6.8	215.3	44.3
Self-Help	5.7	55.2	40.7
Physical	4.5	28.6	41.2

Impact on User's Practices

A secondary purpose of this study was to determine if changes occurred in program practices as a result of using either of the Files and participating in the field test. Referenced programs are those which were involved in the Summative Evaluation Field Test as Primary Sites. There were 13 identified as such at the beginning of the field test, with 12 completing the agreements and supplying the necessary data. The data used to determine impact on user's

practices were collected (1) informally throughout the year by DEC/P staff and (2) through a telephone interview conducted by a staff member at the end of the year. Eleven programs were contacted and 19 staff members were interviewed. No more than three staff members were interviewed from any given program. The identity of persons interviewed depended upon the size of the program and the organizational hierarchy. The break-down of positions interviewed are as follows: program directors 4; education coordinators 1; center directors 4; and teachers 9.

Information collected during the field test period and from the telephone interview indicated that teachers became more oriented toward the developmental needs of children. Teachers seemed delighted with the idea that now they were able to plan according to developmental levels rather than chronological ages. Not only were teachers able to identify the lower levels of development, but were also able to note advanced levels. As one teacher stated "I found that children are much more advanced than I realized."

Since the teachers could identify developmental levels, they were able to provide instruction to meet the individual needs of children. This information was collected by asking interviewees the question "Are there any differences now in planning for children compared with your planning before participating in the field test?" Sixteen (84%) responded with very positive, informative comments. There was a shift from large group instruction to small group or individual instruction. Several teachers, on their own initiative, developed very unique systems of record keeping for individual children. Thus, overall organization regarding curriculum planning was improved.

The teachers became more conscientious of the need for individual child assessment. According to the data, only one program conducted assessments for curriculum planning prior to the field test. A more "informal" approach to

assessment was used in the remaining 11 programs, e.g., "an instrument the director wrote herself," or "assessments were conducted when needed." Nine programs said that they would continue conducting formal assessments because it allows them to plan for the individual needs of children.

All staff interviewed indicated that the Files had improved and strengthened their programs. Areas noted where improvement occurred were: (1) identifying developmental levels, (2) individualization of instruction, (3) pre-planning of curriculum, (4) teachers became more creative and effective, and (5) child and program evaluations.

All interviewees wanted to continue using the Files beyond the field test and plan to do so. The fear of not being able to use the Files lead one teacher to plea "Don't take those Files from us."

Summary of Results

The results presented in the foregoing section indicate that children, attending preschool programs which utilized the Files substantially, did make significant gains in development. Fourty hypotheses were formulated to cover the various types of programs and all possible treatment combinations. These were statistically tested, and the acceptance or rejection of specific hypotheses are noted in Table 23 following this summary section.

From the data, it is evident that the greatest gains occurred in the areas of academic development. This was consistent when data were analyzed for all subjects and the various subgroups. The exception to this were those subjects attending day care and receiving both Files as treatment in a classroom setting. These findings are not consistent with the predictions made by teachers. The majority of teachers (37.3%) predicted that the greatest gains would be made in communication development. The next highest area was social (23.9%) followed

by self-help (17.9%). Academic development was fourth with 11.9% of the teachers predicting that children would have the greatest gains in this area. This tends to rule out the possibility that teachers were influencing the outcomes with hidden biases.

Children participating in programs which utilized the Classroom Files in a classroom setting had greater gains in development than children in other program approaches. Within this setting, Head Start and kindergarten children had greater gains than day care children. Data presented in Table 22 below regarding the number of activities used reveals that day care teachers used fewer Files' activities than Head Start and kindergarten teachers, which may account for less development.

Table 22

Average Number of Activities Used by Head Start, Kindergarten and Day Care Teachers

Scale	Head Start	Kindergarten	Day Care
Physical	45.1	101.6	20.4
Self-Help	162.0	196.0	19.8
Social	624.8	707.4	103.8
Academic	458.4	331.2	92.5
Communication	325.0	247.4	84.0

As noted in the results section, two subgroups of children failed to achieve the expected gains in development; children attending a day care program receiving both Files as treatment, and children participating in a home-based program receiving the Day Care and Home Files. No identifiable reason can be noted for the lack of development in the day care program, except there

seemed to be inflated scores on the pretest which resulted in higher predicted scores. Teachers rating the children in the home-based program tended to rate a number of children lower in development at posttesting than at pretesting. The only area of development where these children had significant gains was in academic development.

The conclusions that can be drawn from the data are:

1. Children attending programs which utilized the Files as a major source of curriculum did achieve significant gains in development in the five areas measured.

2. Children attending programs providing instruction in a classroom setting and utilizing the Classroom Files had overall greater gains than children in other program variations.

3. The greatest gains in development occurred in those programs which utilized the Files' activities on the average more than other programs.

4. There were no differences in the amount of gains made by males or females.

5. There were differences in the gains of development by three-, four-, and five-year olds, with the data indicating that five-year olds had gains greater than the three's and four's.

6. Programs utilizing the Files indicated they were effective in promoting development in young children and that changes had occurred in the programs as a result of their participation.

This Summative Evaluation Field Test was initiated and concluded with acknowledgements that certain internal problems existed with the research design utilized. Whether use of the Files or other intervening variables contributed to the gains in development in the amounts and manner which have been reported may be debated. The field test was conducted under conditions similar to those which future users will encounter. It is therefore recommended that future users conduct similar evaluations within their own program settings to make final determinations as to the effectiveness of the two sets of Files.

Table 23

Acceptance and Rejection of Specific Hypotheses

Hypotheses 1-5:	Subjects in general using either of the Files will score significantly higher than would be predicted on each of the five developmental scales.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	1	A
	Self-Help	2	A
	Social	3	A
	Academic	4	A
	Communication	5	A
Hypotheses 6-10:	Subjects in general using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	6	A
	Self-Help	7	A
	Social	8	A
	Academic	9	A
	Communication	10	A
Hypotheses 11-15:	Subjects in Head Start programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	11	A
	Self-Help	12	A
	Social	13	A
	Academic	14	A
	Communication	15	A
Hypotheses 16-20:	Subjects in day care programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	16	R
	Self-Help	17	R
	Social	18	A
	Academic	19	A
	Communication	20	R

Hypotheses 21-25: Subjects in kindergarten programs using the Classroom Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.

Scales	Number	Accepted (A)/Rejected (R)
Physical	21	A
Self-Help	22	A
Social	23	A
Academic	24	A
Communication	25	A

Hypotheses 26-30: Subjects in Head Start programs using the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files in combination[1] will score significantly higher than would be predicted on each of the five developmental scales.

Scales	Number	Accepted (A)/Rejected (R)
Physical	26	R
Self-Help	27	A
Social	28	A
Academic	29	A
Communication	30	A

Hypotheses 31-35: Subjects in day care programs using the Classroom Learning Activities Files and the Day Care and Home Learning Activities Files in combination[2] will score significantly higher than would be predicted on each of the five developmental scales.

Scales	Number	Accepted (A)/Rejected (R)
Physical	31	R
Self-Help	32	R
Social	33	R
Academic	34	R
Communication	35	R

[1] Children attend class one day per week and receive instruction in the home via a home visitor.

[2] Classroom and Day Care and Home Files are used in combination in a classroom setting.

Hypotheses 36-40:	Subjects in Head Start programs using the Day Care and Home Learning Activities Files will score significantly higher than would be predicted on each of the five developmental scales.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	36	R
	Self-Help	37	R
	Social	38	R
	Academic	39	A
	Communication	40	R
Hypotheses 41-45:	There will be no significant differences in the amount of gains in development on each of the five developmental scales between males and females when eigher of the Files are used as treatment variables.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	41	A
	Self-Help	42	A
	Social	43	A
	Academic	44	A
	Communication	45	A
Hypotheses 46-50:	There will be no significant differences in the amount of gains in development on each of the five developmental scales between 3-, 4-, and 5-year-olds when either of the Files are used as treatment variables.		
	Scales	Number	Accepted(A)/Rejected(R)
	Physical	46	R
	Self-Help	47	R
	Social	48	R
	Academic	49	R
	Communication	50	R

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APPENDICES

APPENDIX A

Learning Activities Files Evaluation Data

LEARNING ACTIVITIES FILES EVALUATION DATA

Program _____

Teacher _____ Date _____

Center Name or Location _____

1. Number of years' experience teaching in:

   _____ Preschool

   _____ Elementary

   _____ Secondary

   _____ Other; please specify _____

2. Please indicate the highest grade or level of education you have attained by circling the appropriate number.

Elementary/High School	1	2	3	4	5	6	7	8	9	10	11	12
College-Undergraduate	13	14	15	16								
College-Graduate	17	18	19	20								

3. What area(s) of development do you emphasize as most important for your children? (Please check <u>one</u> or <u>two</u>.)

   _____ Language (communication)

   _____ Social/Emotional

   _____ Academic (cognitive)

   _____ Physical (gross and fine motor)

   _____ Self-help and Habits

   _____ Other; please explain _____

   _____

4. Which Files did you use?

_____ Classroom Learning Activities Files

_____ Day Care and Home Learning Activities Files

_____ Combination of the Classroom and Day Care/Home Files

5. In your judgment, are the Files best suited for:

_____ a beginning teacher with no prior experience?

_____ a teacher with a few (1 to 3) years of experience?

_____ a teacher with many (more than 3) years of experience?

_____ all teachers, regardless of experience?

6. Which method for "selection of activities" did you utilize in planning your curriculum emphasis?

_____ AEL's Lesson Plans with the 14 cluster areas.

_____ AEL's Lesson Plans with the 5 broad areas of development.

_____ Selection of activities based upon a child's Developmental Profile, that is, emphasizing weak areas and building on strengths.

_____ My own plan based upon specific procedures. Please explain briefly:

_____

_____

7. In what area of development do you think your children will have the greatest amount of growth and development this year? (Please pick one area.)

_____ Language (communication)

_____ Social/Emotional

_____ Academic (cognitive)

_____ Physical (gross and fine motor)

_____ Self-help and Habits

8. Did you participate in AEL's evaluation field testing activities conducted during Spring, 1976?

_____ Yes _____ No

9. In the right-hand column of Chart I below, please indicate the percentage of time or emphasis given, on the average across the program year, to each of the five curricular areas which correspond to the five scales in the Developmental Profile. If each area receives equal attention, you would put 20 percent in each blank space. If more emphasis is given to one or two areas than the others, try to estimate how much more and note the percentage for each. When added together, they should sum to the total of 100 percent, which is already noted at the bottom of the column.

Chart I

Curricular Area	Percentage of Time or Emphasis
Physical	_____%
Self-help	_____%
Social	_____%
Academic	_____%
Communication	_____%
	Total = 100 %

In the right-hand column below of Chart II, please indicate to what extent the Files were utilized as your curriculum. If the Files' Activities were used as your total curriculum, then you would put 100 percent in each blank space. If you used the Files as one-half of your curriculum for each area, then you would put 50 percent in each blank space. The percentage may vary for each area, and they can add up to a total of more or less than 100 percent.

Chart II

Curricular Area	AEL Files' Utilization
Physical	_____%
Self-help	_____%
Social	_____%
Academic	_____%
Communication	_____%

APPENDIX B

Activities Usage from Files

Activities Usage from Files

Program _____ Date _____

Teacher _____ Center _____

Type of Files Used: ☐ Classroom Files ☐ Day Care and Home Files

Please record in the blank spaces the total number of activities used within each competency. If a particular activity was used more than one time, count each time used in obtaining a total. For example, if C-1-1 was used four times, C-1-2 used two times, C-1-3 used one time, and C-1-4 used one time, your total number of activities used for Competency 1 would be 8.

Comp.	No. Used	Comp.	No. Used	Comp.	No. Used
1	_____	21	_____	41	_____
2	_____	22	_____	42	_____
3	_____	23	_____	43	_____
4	_____	24	_____	44	_____
5	_____	25	_____	45	_____
6	_____	26	_____	46	_____
7	_____	27	_____	47	_____
8	_____	28	_____	48	_____
9	_____	29	_____	49	_____
10	_____	30	_____	50	_____
11	_____	31	_____	51	_____
12	_____	32	_____	52	_____
13	_____	33	_____	53	_____
14	_____	34	_____	54	_____
15	_____	35	_____	55	_____
16	_____	36	_____	56	_____
17	_____	37	_____	57	_____
18	_____	38	_____	58	_____
19	_____	39	_____	59	_____
20	_____	40	_____		

Comments: _____

APPENDIX C

Actual and Predicted Development for Field Test Subgroups

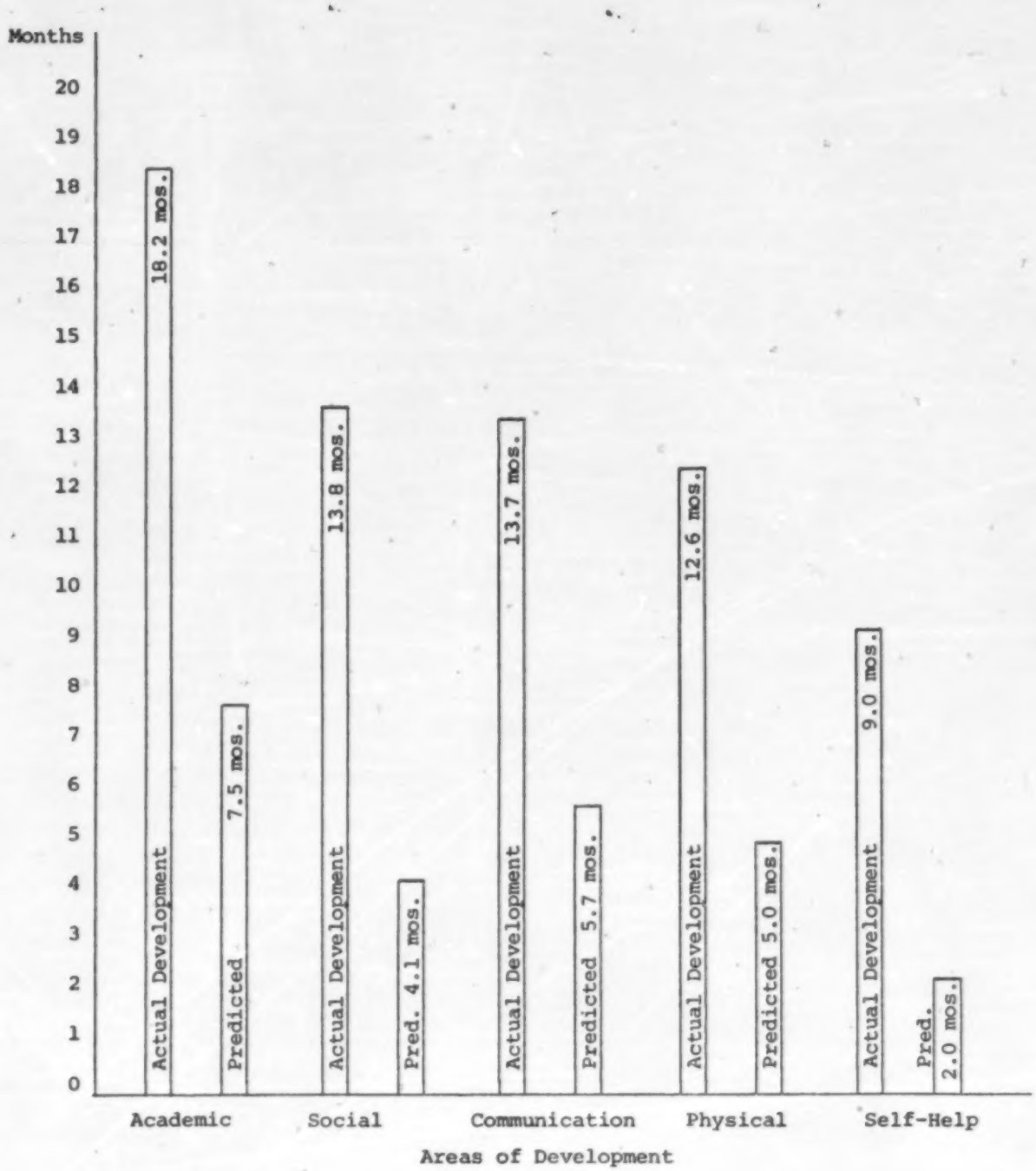

Figure 1-C

Actual and Predicted Development for Subjects Receiving Classroom Files as Treatment

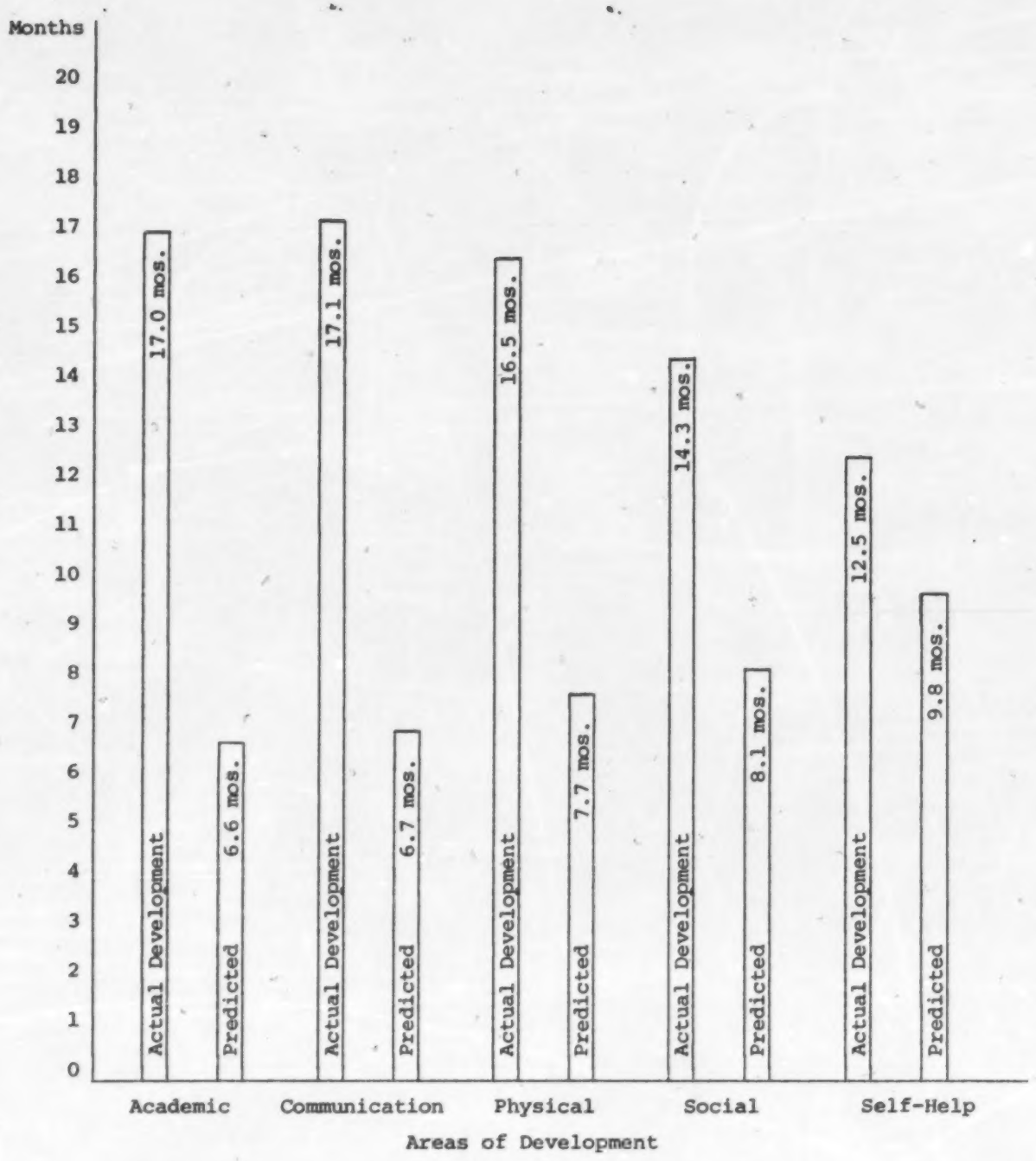

Figure 2-C

Actual and Predicted Development for Head Start Subjects
Receiving Classroom Files as Treatment

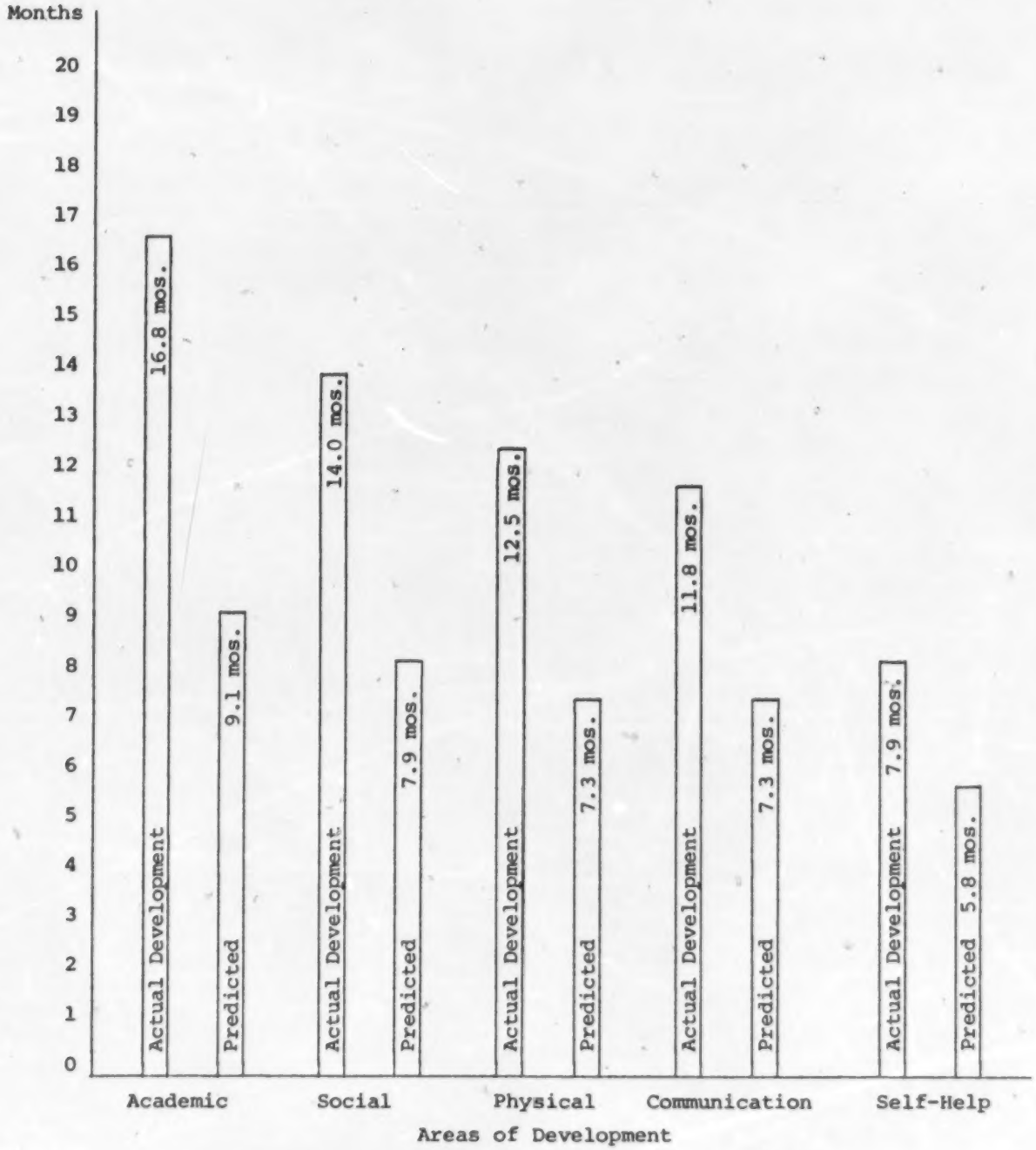

Figure 3-C

Actual and Predicted Development for Day Care Subjects
Receiving Classroom Files as Treatment

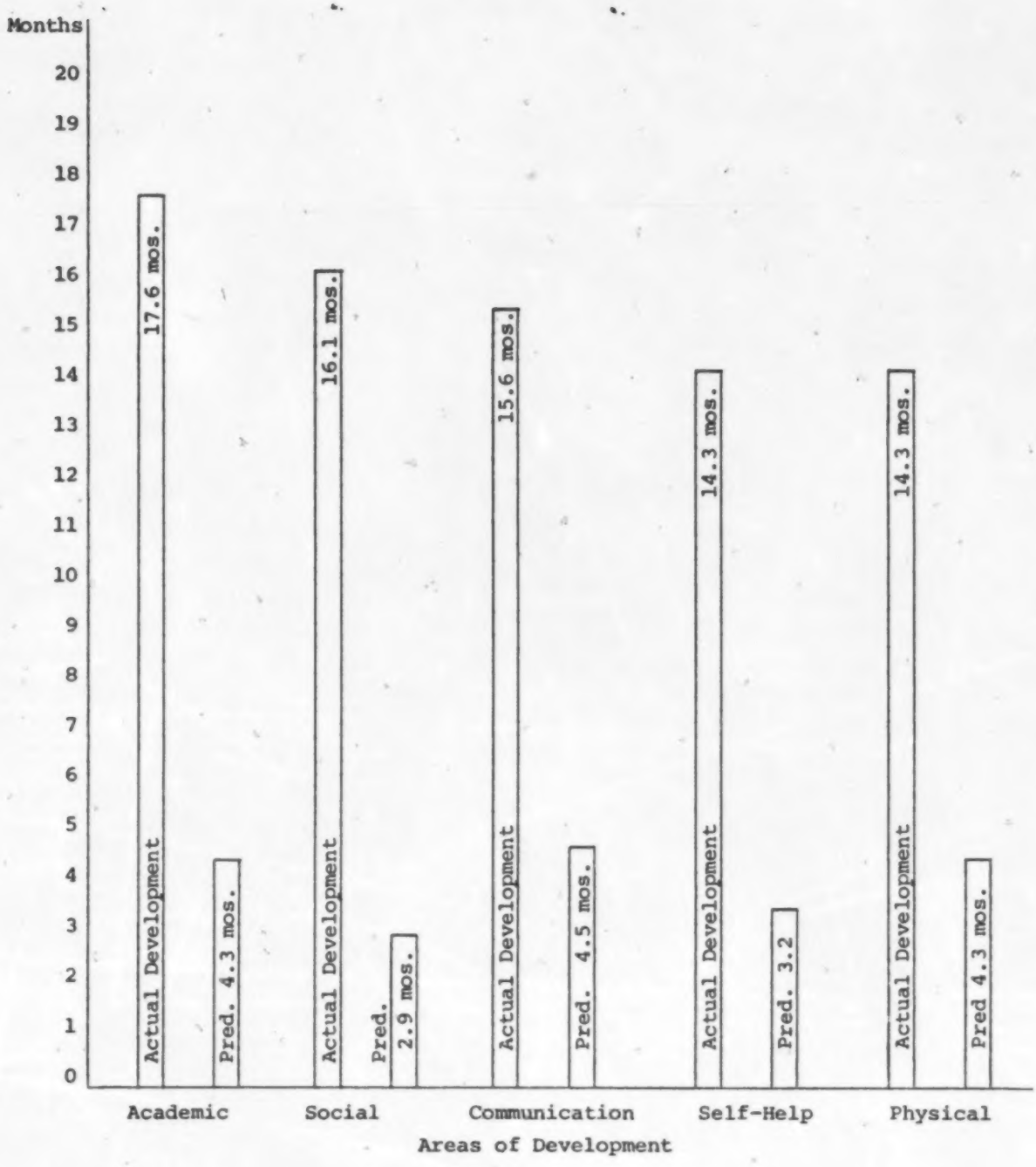

Figure 4-C

Actual and Predicted Development for Kindergarten Subjects
Receiving Classroom Files as Treatment

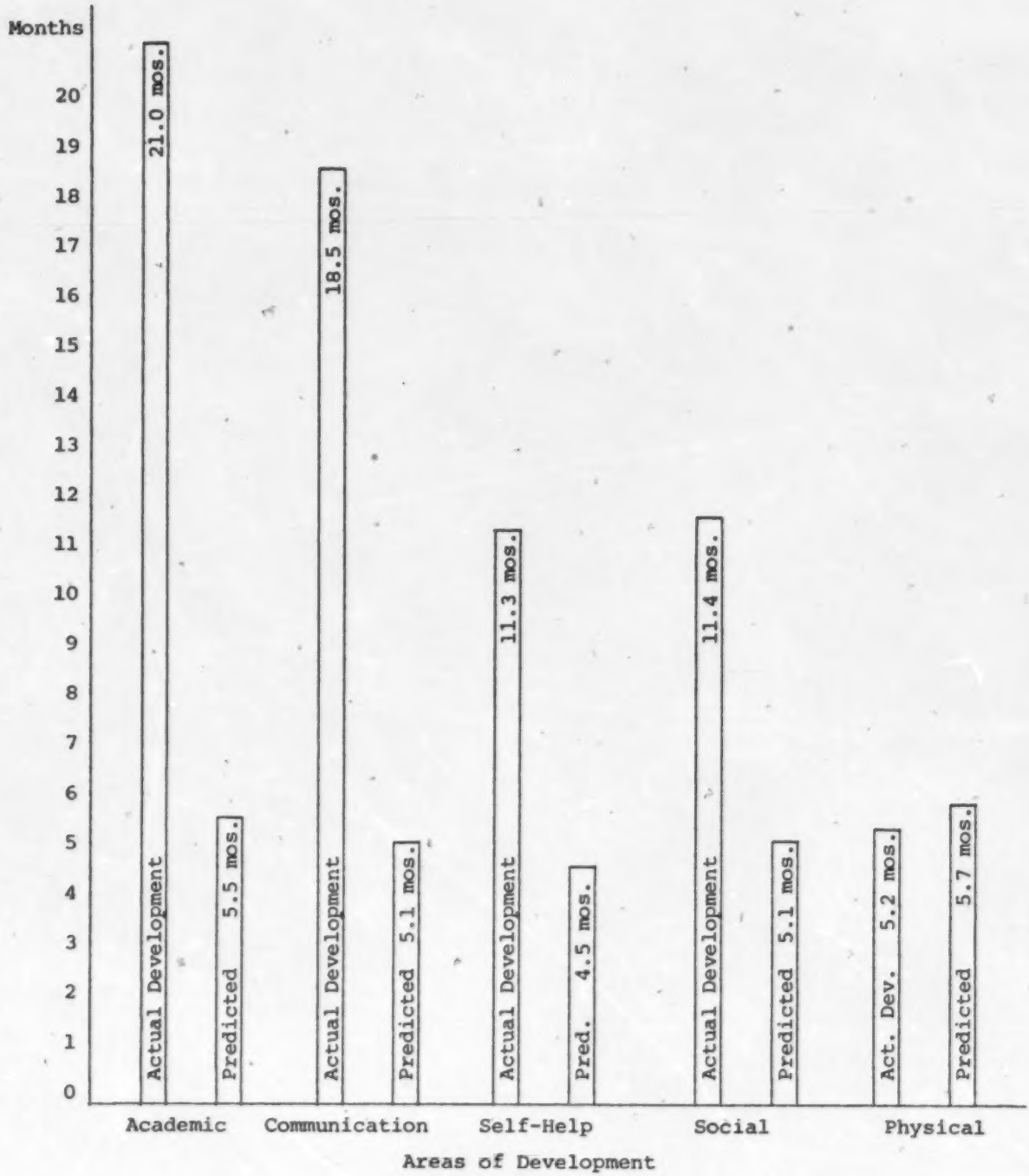

Figure 5-C

Actual and Predicted Development for Head Start Subjects Receiving Both Files as Treatment in a Classroom and Home Setting

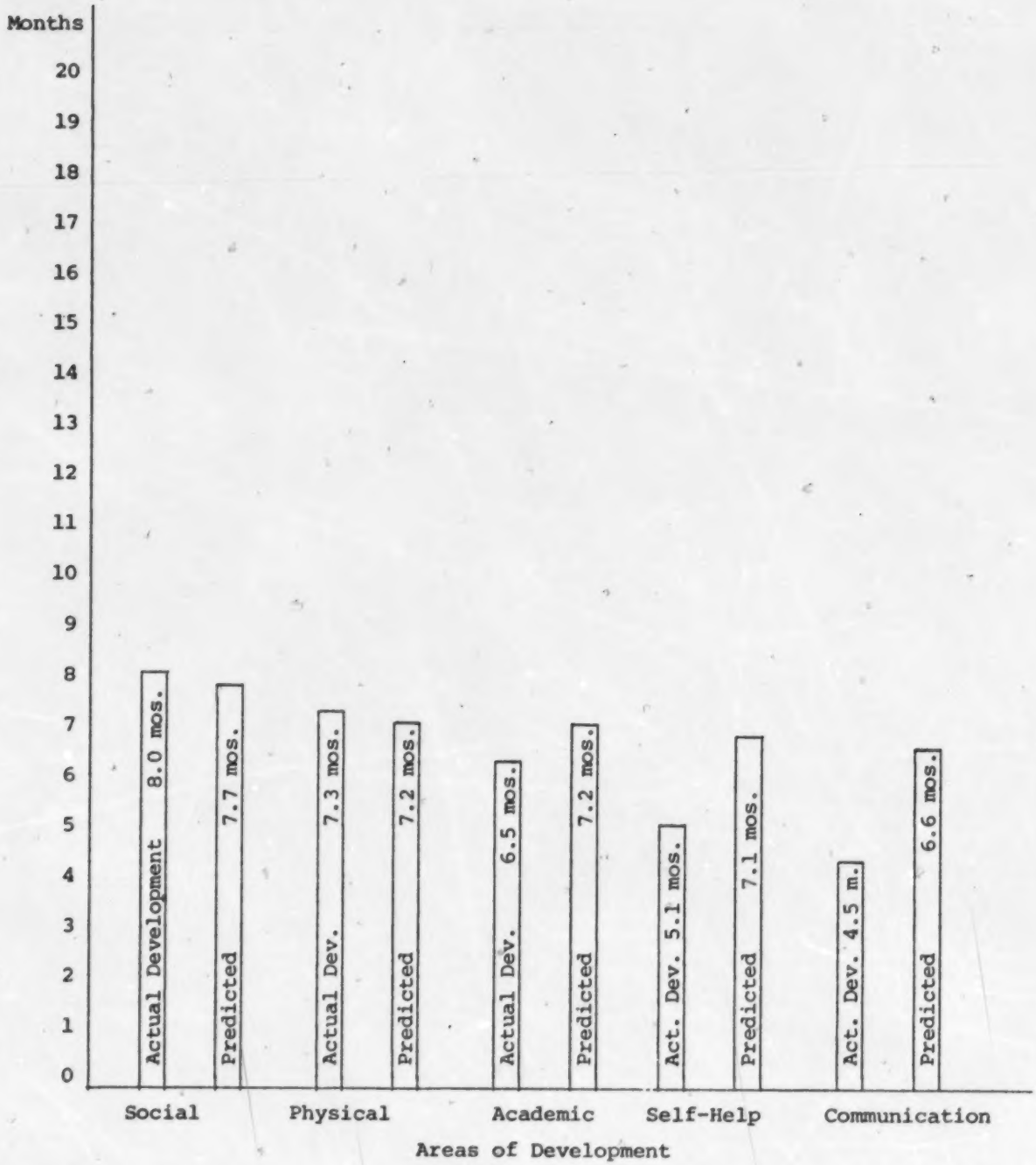

Figure 6-C

Actual and Predicted Development for Day Care Subjects
Receiving Both Files as Treatment
in a Classroom Setting

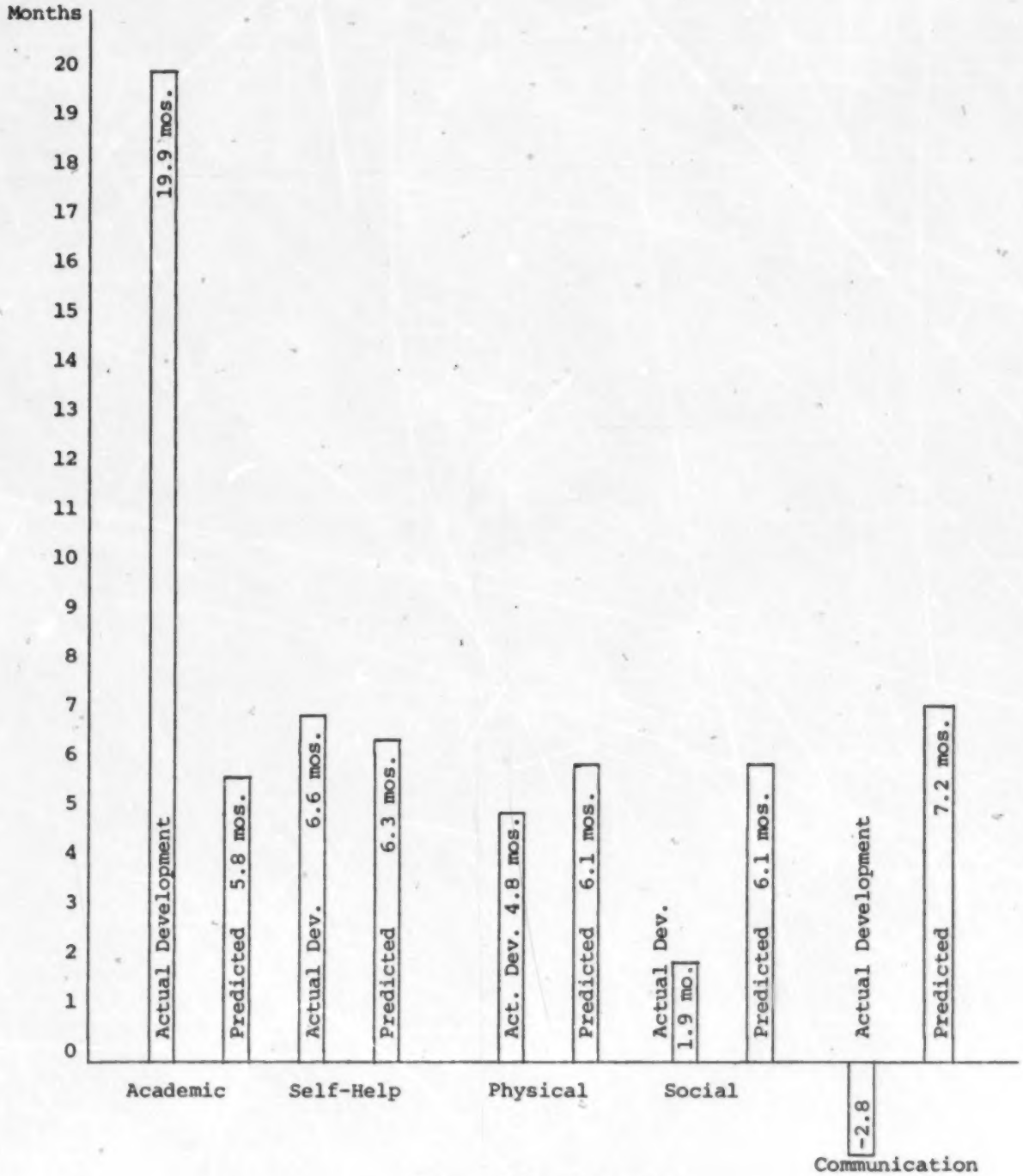

Figure 7-C

Actual and Predicted Development for Head Start, Home-Based Subjects Receiving Day Care and Home Files as Treatment

APPENDIX D

Utilization of Files Data

Table 1-D

Utilization of Classroom Files Data

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	10.8	221.2	45.1
Communication	9.6	345.3	47.9
Social	7.6	171.9	50.6
Self-Help	7.6	44.3	45.9
Physical	7.0	90.4	43.1

Table 2-D

Utilization of Classroom Files Data for Head Start Teachers

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	10.4	458.4	60.2
Communication	10.3	325.0	55.8
Physical	8.8	45.1	49.5
Social	6.2	624.8	58.5
Self-Help	4.6	162.0	45.5

Table 3-D

Utilization of Classroom Files Data
for Day Care Teachers

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	7.7	92.5	44.7
Social	6.1	103.8	49.1
Physical	5.1	20.4	47.7
Communication	4.4	84.0	55.4
Self-Help	2.0	19.8	47.1

Table 4-D

Utilization of Classroom Files Data
for Kindergarten Teachers

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	13.2	331.2	26.6
Social	13.1	707.1	34.4
Communication	11.1	247.4	35.3
Self-Help	11.1	196.0	28.8
Physical	9.1	101.6	37.2

Table 5-D

Utilization of Both Files Data for Head Start Teachers in Classroom and Home

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	15.4	59.8	37.6
Communication	13.4	63.1	39.7
Self-Help	6.7	4.1	33.7
Social	6.2	22.1	33.7
Physical	-0.5	4.0	32.4

Table 6-D

Utilization of Both Files Data for Day Care Teachers in a Classroom

Scale	Mean Difference	Average No. Activities	% Files Utilized
Social	1.0	188.6	79.6
Physical	.1	32.6	56.3
Academic	- .7	253.0	96.0
Self-Help	- .9	48.3	56.3
Communication	-2.0	151.0	96.0

Table 7-D

Utilization of Day Care and Home Files Data for Head Start Teachers in a Home-Based Program

Scale	Mean Difference	Average No. Activities	% Files Utilized
Academic	14.0	272	100
Self-Help	.3	17	100
Physical	- 1.3	25	100
Social	- 5.8	174	100
Communication	-10.0	109	100